



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/501,843

11/30/2004

Gerhard Bonnet

PTK0026

8953

832 7590 10/23/2009

BAKER & DANIELS LLP
111 E. WAYNE STREET
SUITE 800
FORT WAYNE, IN 46802

EXAMINER

BRAINARD, TIMOTHY A

ART UNIT

PAPER NUMBER

3662

MAIL DATE

DELIVERY MODE

10/23/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/501,843	Applicant(s) BONNET, GERHARD	
	Examiner TIMOTHY A. BRAINARD	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 45-72 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 45-72 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 45-58 and 60-72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

2. With respect to claims 45 (line 23), 48 (line 1), 60 (line 17), 62 (line 1), 64 (line 1), 68 (line 16), 70 (line 23), 72 (line 23, 28), Claim element " means for modulation "" are means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function. The specification does not disclose a modulator of any kind modulating. With respect to claims 46 (2), 72 (line 26), Claim element " means for phase modulation " are means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function. With respect to claim 50 (line 1 and 2), Claim element " means for changing modulation " are means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function.

3. Applicant is required to:
4. (a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or
5. (b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).
6. If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant is required to clarify the record by either:
 7. (a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or
 8. (b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

Art Unit: 3662

from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

10. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

11. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claim 45-49, 51-52, and 59-67 are provisionally rejected on the ground of

nonstatutory obviousness-type double patenting as being unpatentable over claim of

copending Application No. 10/501842. Although the conflicting claims are not identical,

they are not patentably distinct from each other because **Application No. 10/501842**

claims (claim 45 and 60) an arrangement for distance measurements using a frequency

shifted laser radiation source, said arrangement comprising: an object detection sensor;

a frequency shifted feedback laser resonator having a pumped gain medium therein

with a gain greater than unity so as to emit laser light having a plurality of frequency

components changing with time in a chirping manner; means for splitting said emitted

laser light having said plurality of frequency components changing with time in a

chirping manner into an object beam for irradiating an object and a reference beam, the

object sensor being adapted to receive laser light radiation coming back from an object

illuminated with the object beam light and being at a distance to be determined and also

being adapted to receive said reference beam via a reference path not including the

object in such a manner that the laser light radiation coming back from the object and

Art Unit: 3662

the reference beam interfere with one another on the object sensor, said interference producing a signal by the beating of a plurality of frequency components that change with time in a chirping manner and which comprise laser light radiation coming back from said object illuminated with the object beam and beating with the plurality of frequency components that change with time in a chirping manner and which comprise the reference beam received at the sensor via said reference path not including the object, the intensity of said beat signal allowing for the determination of the distance of the object in response to the intensity of said beat signal; wherein the frequency shifted feedback laser radiation source further comprises a means for injection of narrow banded, non-pumping, modulated seed laser light into the frequency shifted feedback resonator, said means for injection comprising a means for modulation of the narrow banded non-pumping seed laser light, such that said intensity of said beat signal is increased (claim 36), (claim 46) the means for modulating the seed laser light is a means for phase modulation of the seed laser light (claim 37), (claim 47 and 61) the seed light has a wavelength close to the wavelength where the gain of the pumped gain medium is unity so that amplification of the seed laser light occurs at latest after a few resonator round trips (claim 38), (claim 48 and 62) the means for modulation is adapted to modulate around a signature frequency as defined in claim 48 (claim 39), (claim 49 and 63) the modulation frequency is periodically varied around the signature frequency as defined in claim 49 (claim 40), (claim 59) and wherein the intensity of said beat signal is increased beyond variations obtainable by fluctuations of the frequency shifted feedback radiation source by providing a modulation at the frequency shifted feedback

Art Unit: 3662

radiation source for object irradiation (claim 36), (claim 64) the means for modulation is adapted to vary the modulation frequency periodically linear with time (claim 36) (a chirp varies linearly with time) (claim 52 and 65) the injection laser has a frequency width of less than 5 % of the gain of the frequency shifted feedback laser radiation gain medium (claim 44), (claim 51 and 66) the injection laser is a single mode laser (claim 45), (claim 67) the gain medium of the frequency shifted feedback laser is an optical fiber internal to the resonator and/or constituting the resonator (claim 46).

13. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. Claim 50 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 39 of copending **Application No. 10/501842** in view of McEwan (US 6462705). McEwan teaches a means is provided for changing the seed frequency in a stepwise manner and wherein said means for changing is adapted to maintain the seed frequency constant for a given measuring time T and/or to wobble around an average value of a respective seed frequency value (col 2, lines 1-10). It would have been obvious to modify **Application No. 10/501842** to include a means is provided for changing the seed frequency in a stepwise manner and wherein said means for changing is adapted to maintain the seed frequency constant for a given measuring time T and/or to wobble around an average value of a respective seed frequency value because it is one of multiple design choices with no new or unexpected results.

15. This is a provisional obviousness-type double patenting rejection.

Art Unit: 3662

16. Claim 53 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 44 of copending **Application No. 10/501842** in view of Shanttil (US 5955992). Shanttil teaches the injection laser injects the non-pumping injection laser light into the gain medium of the frequency shifted feedback laser (col 6, lines 22-50). It would have been obvious to modify **Application No. 10/501842** to include the injection laser injects the non-pumping injection laser light into the gain medium of the frequency shifted feedback laser because it is one of multiple design choices with no new or unexpected results.

17. This is a provisional obviousness-type double patenting rejection.

18. Claim 54-55 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 39 of copending **Application No. 10/501842** in view of Shafer et al (US 6459483). Shafer teaches a filter for filtering the beat intensity related object sensor signals determined at the object detecting sensor, the filter is adapted for filtering of components changing with the seed frequency (fig 14 and col 7, line 54 to col 8, line 7). It would have been obvious to modify **Application No. 10/501842** to include a filter for filtering the beat intensity related object sensor signals determined at the object detecting sensor, the filter is adapted for filtering of components changing with the seed frequency because it is one of multiple design choices with no new or unexpected results.

19. This is a provisional obviousness-type double patenting rejection.

20. Claim 56 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 39 of copending **Application No.**

10/501842 in view of **Shafer** and Daniels (US 3182312). Claim 55 is rejected as described above. Daniels teaches signal amplification for object detection sensor signals having an amplification stage subsequent to a filter stage and at least one regulating or control circuit for setting a given amplification (col 15, lines 2-15). It would have been obvious to modify **Application No. 10/501842** in view of **Shafer** to include a signal amplification for object detection sensor signals having an amplification stage subsequent to a filter stage and at least one regulating or control circuit for setting a given amplification because it is one of multiple design choices with no new or unexpected results.

21. Claim 57 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 39 of copending **Application No. 10/501842** in view of **Shafer, Daniels**, and Phillips et al (US 5835199). Claim 56 is rejected as described above. Phillips teaches a stage for determining a distance in response to an object detection sensor signal signature as a function of seed frequencies (abs). It would have been obvious to modify **Application No. 10/501842** in view of **Shafer, Daniels** a stage for determining a distance in response to an object detection sensor signal signature as a function of seed frequencies because it is one of multiple design choices with no new or unexpected results.

Allowable Subject Matter

22. Claim 58 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Art Unit: 3662

23. Claims 68-72 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

24. The following is a statement of reasons for the indication of allowable subject matter: Phillips et al (US 5835199), Shattil (US 5955992), and Gabl (US 5592327) does not teach nor make obvious (claim 68, 70) the arrangement further comprises a stage for changing the seed frequency with time and an object detection sensor signal evaluation stage for determining as a distance related measurement value a value representative for the time until a predetermined object signature is obtained by measuring the time until a maximum or threshold value is reached; and an analog maximum hold circuit for detection of a temporal signal curve having a related digital register for writing in of a sweep time or counter value for the seed frequency and further having a circuit for determination of a sweep-time or counter value for the seed frequency to be registered in response to reaching an analog threshold or maximum value, or wherein a derivation stage for deriving of the frequency dependent object detection sensor signal signature is provided, (claim 72) a stage for determining a distance in response to an object detection sensor signal signature as a function of seed frequencies, wherein the stage for determining the distance according to the object detection sensor signal signature in response to the seed frequency is adapted to determine the distance in response to reaching a maximum value of the object detecting sensor signal at a given frequency and/or in response to the given amplification value of the object detection sensor signal when changing the seed frequency and/or in response to a value within a frequency window around the seed frequency and/or in

Art Unit: 3662

response to the strength of the seed frequency component in the object detecting sensor signal.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY A. BRAINARD whose telephone number is (571)272-2132. The examiner can normally be reached on Monday - Friday 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/501,843
Art Unit: 3662

Page 11

/Timothy A Brainard/
Examiner, Art Unit 3662